

AVOIDING A SNOW RELATED COLLAPSE

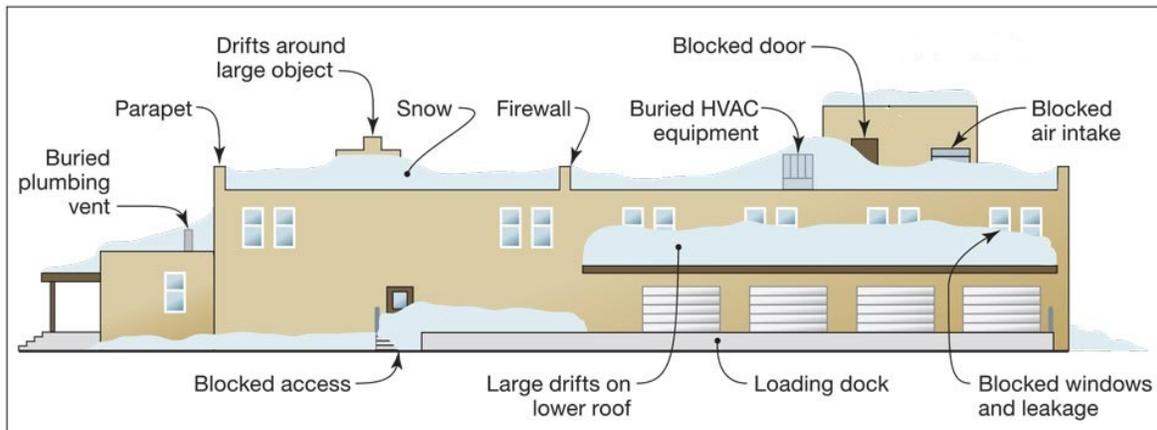


Always unexpected, a collapsed roof due to snow/ice/water accumulation is a common problem, but, can be avoided during the winter season. A heavy snow load can also cause ice build-up which can affect the structure of your building, and, lead to melting snow or ice (if it is poorly drained) which can then lead to extensive water damage to both the building and its contents.



Last year a WOODsure client suffered a multi-million dollar collapse due to a combination of built up snow, and an unexpected mid-winter rain storm. The client then experienced several months of interruption to its operations as the entire plant required rebuilding. This same storm caused multiple large collapses for a variety of insurance companies in Eastern Canada before it subsided.

PLAN TO CLEAR SNOW BEFORE YOU HAVE A COLLAPSE



Unbalanced snow load from drifting and sliding snow on typical commercial or industrial building

HOW TO PREPARE



INSPECTION

Establish and maintain a “**Snow Event Response Plan**”, in addition to inspecting the building, other items that should be inspected for proper function include:

- Gutters and downspouts for disrepair and free of debris
- Seals around rooftop penetrations are intact
- Openings around exhaust vents
- Internally drained roof downspouts are clear of debris
- Flashing around connections of rooftop equipment
- Roof soffit and ridge ventilation
- Vertical position of trusses are not leaning out-of-plane
- Metal plates connecting truss member chords
- Lateral braces are firmly connected to roof structure and do not show signs of over-stress or disrepair
- Attic areas are dry and free of excess moisture

WARNING SIGNS

- Sagging ceiling tiles or boards, ceiling boards falling out of the ceiling grid, and/or sagging sprinkler lines and sprinkler heads
- Sprinkler heads deflecting below suspended ceilings
- Popping, cracking, and creaking noises
- Sagging roof members, including metal decking or plywood sheathing
- Bowing truss bottom chords or web members
- Doors and/or windows that can no longer be opened or closed
- Cracked or split wood members
- Cracks in walls or masonry

If any of the warning signs identified above are observed, the building should be promptly evacuated and a qualified design professional should be contacted to perform a detailed structural inspection. A qualified design professional, such as a Professional Engineer, has the experience to make an assessment of structural integrity of the building and identify steps to make the building safe.

HOW TO REACT



WHAT TO DO DURING A SIGNIFICANT SNOW EVENT

The **Snow Event Response Plan** should be reviewed. The Plan should define a methodology to determine an approximate snow load and at what point snow removal should be initiated. Snow removal will prevent overstressing of the roof structure. Having an in-house plan for snow removal in place or a contractor on retainer is imperative. Contractors will be in high demand and difficult to find once a snow storm begins.

WHAT TO DO AFTER A MAJOR SNOW EVENT

Even if snow accumulation during an individual snow event approaches but does not surpass the threshold of building safety, removal of snow from the roof may still be in order. Roof snow that is exposed to sunlight can soften, become denser, and then harden when the temperature drops below freezing. Water may pool and subsequently freeze, creating a concentrated area of loading on the roof. If subsequent snow events are anticipated, removing snow from the roof will minimize the risk of accumulating snow causing structural damage. One benefit of immediate snow removal is that the effort required to remove the snow from the rooftop is reduced. However, when snow accumulation is minor, the likelihood of damaging the roofing material or risk of being on a roof outweighs the benefits of removal.

WHAT TO DO BEFORE ANOTHER SNOW EVENT

The steps taken in advance of a subsequent snow event vary only slightly from the approach in advance of any snow event. Key steps include inspection of drains, gutters, downspouts, and vents for snow or ice blockage from the earlier snowfall.

Designated areas for removed rooftop snow must have sufficient capacity to accommodate additional snow. After a major storm, snow may need to be removed from the premises to create space for subsequent snow. For example, if snow is stored in the parking lot, but the amount of snowfall is such that it occupies too much of the lot area, the snow may need to be transported offsite.